REMARKS

Claims 6-9, 13-23, and 30 are pending and rejected.

Claims 6, 13, 18, and 21 have been amended to recite a transgenic plant comprising a nucleic acid encoding a microbial endocellulase or endoglucanase. Support is in the specification on page 10, line 6; page 3, line 21 and page 6, line 7.

Claims 7-9, 13-21 and 30 have been amended to recite the "transgenic plant'. Support is in the specification on page 7, first paragraph.

Claim 13 has been amended to correct an obvious error to delete the word "derives" and replace it with "is derived".

Claim 12 has been cancelled without prejudice.

No new matter has been added by these amendments.

Objections to the Drawings

Figure 1 was objected to for reasons in FTO Form 948. A corrected version of Figure 1 is submitted herewith, and should overcome the objections.

Objection to Claim 13

Claim 13 is objected to for reciting the word "derives" instead of "is derived". The claim has been amended to correct this error and this amendment overcomes the objection.

Rejection under 35 U.S.C. § 112, second paragraph, Indefiniteness

Claims 6, 12-13 and 21 are rejected under section 112, second paragraph, as allegedly being indefinite for the recitation of the word "cellulases". In particular, the Office Action points out that the definition for cellulases in the specification includes three enzymes: β-1,4-endoglucanases (EC 3.2.1.4), β-1,4-exoglucanases (EC 3.2.1.91) and 1,4-β-D-glucosidases (EC 3.2.1.21). However, the Office Action contends that "in Applicants arguments filed April 12, 2004, Applicant quotes Lashbrook et al. to state that endo-β-1,4-glucanase (EC 3.2.1.4) is not a cellulase." Thus, the Examiner is confused as to what Applicant intends to encompass by the term "cellulase."

Applicants respectfully disagree with this rejection, however, in order to advance prosecution of certain embodiments of the invention, the claims have been amended to recite transgenic plants comprising a nucleic acid encoding an endocellulase or endoglucanase.

Regarding the language of the claims, Applicant points out that what is required by the second paragraph of section 112 is that the claims set out and circumscribe the particular area which the patent applicant regards as his invention with a reasonable degree of precision and particularity. *In re Moore*, 439 F.2d 1232 (CCPA 1971). "[A]cceptability depends on 'whether one of ordinary sill in the art would understand what is claimed . . . in light of the specification,' even if experimentation may be needed." *Andrew Corp. v. Gabriel Electronics, Inc.*, 847 F.2d 819, 821 (Fed. Cir. 1988) (citing *Seattle Box Co. v. Industrial Crating & Packing*, 731 F.2d 818, 826 (Fed. Cir. 1984)), *cert. denied*, 488 U.S. 927 (1988).

Applicant respectfully point out there seems to be some confusion between the use of the term "cellulase" and the term "endocellulase" or "endoglucanase." The claims have been amended to recite the terms endoglucanases or endocellulases rather than the more generic term "cellulases".

The term "cellulase" is a generic term to describe enzymes that degrade cellulose. The enzymes customarily called "cellulases" are from the Enzyme family GH9 (Glycoside Hydrolase Family 9), which was formerly called Cellulase Family E (See CAZy database, Family GH9, exhibit A). The known activities in this family are endoglucanase (EC 3.2.1.4); cellobiohydrylase (EC 3.2.1.91); and β-glucosidase (EC 3.2.1.21).

The present specification defines cellulase-degrading enzymes on page 10 of specification as "include cellulases, cellobiohydrolases, cellobioses and other enzymes involved in breaking down cellulose and hemicellulose into simple sugars such as glucose and xylose." The specification also describes that "[a]t least three enzymatic activities are required to accomplish this task. β-1,4-endoglucanases (EC 3.2.1.4; also called endocellulases) cleave β-1,4-glycosidic linkages randomly along the cellulose chain. β-1,4-exoglucanases (EC 3,2.1.91, also called cellobiohydrolases, CBH) cleave cellobiose

from either the reducing or the non-reducing end of a cellulose chain. 1,4-β-D-glucosides (EC 3.2.1.21, also called cellobioses) hydrolyze aryl- and alkyl-β-D-glucosides."

The Restriction Requirement dated February 4, 2002, divided the invention into four groups:

I. Claims 6-9 and 11-15 drawn to a plant expressing a cellulase, classified in class 800, subclass 288;

II. Claims 6-9 and 11-15 drawn to a plant expressing a cellobiohydrolase, classified in class 800, subclass 284;

III. Claims 6-9 and 11-15 drawn to a plant expressing a cellobiose, classified in class 800, subclass 298; and

IV. Claim 10 drawn to a package, classified in class 47, subclass 65.

Applciants have amended the claims to use the terms "endocelluases and endoglucanases" that are more descriptive for Group I of the restriction group.

Regarding Lashbrook et al., Applicants respectfully point out to the Examiner that even Lashbrook admits that the enzymes he describes in this article in The Plant Journal 6:1485-1493 as EGases are NOT cellulases because "although the term 'cellulase' has been widely used to describe these endoglucanases, the term is misleading in view of the current lack of evidence for EGase-catalyzed cellulose degradation." (page 1486, col. 1, first paragraph).

Applicants submit the amendments and above remarks overcome this rejection, and request its withdrawal.

Rejections under 35 U.S.C. § 112, first paragraph, Written Description

Claims 6-9, 12-23, and 30 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors were in possession of the claimed invention at the time the application was filed. The Examiner asserts that neither the specification nor the prior art describe the sequence of genes

encoding endocelluases, exocelluases, or cellobioses to the full breadth of the claims. Applicants respectfully disagree with this rejection.

The legal standard for meeting the written description requirement under section 112, first paragraph, is whether "the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." *In re Gosteli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989). Under *Vas-Cath, Inc. v. Mahurkar,* 935 F.2d 1555, 1563-64, 19 USPQ2d 1111,1117 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.

The patent application need not teach what is already known to those of ordinary skill in the art (*Hyatt v. Boone*, 146 F.3d 1348, 47 USPQ2d 1128(Fed. Cir. 1998) citing *In re Eltgroth*, 419 F.2d 918, 921, 164 USPQ 221, 223 (CCPA 1970).

As amended, the claims are directed to "[a] transgenic plant comprising a nucleic acid encoding a microbial endocellulase or endoglucanase" and a transgenic seed obtained therefrom. As noted by the Office Action on page 4 "[t]he specification, via Thomas et al., Collmer et al., Ghangas et al., Wilson and Lao et al., teaches a total of about 20 endoglucanases (presumably β-1,4-endoglucanase) coding sequences from about 12 bacterial species and one fungal species. . . . " Applicants respectfully argue that teaching about 20 examples of endoglucanases is sufficient to show those of ordinary skill in the art the invention as presently claimed.

Regarding claim 14, Applicants respectfully argue that upon teaching that *Thermomonospora fusca* encodes an endoglucanase, it would also lead those of ordinary skill in the art to the other *Thermomonospora* species for other endoglucanases or endocellulases.

Regarding claim 15, it has been amended to recite endoglucanases or endocellulases and avoids this rejection.

Applicants argue the above amendments and remarks overcome these rejections and request their withdrawal.

Rejections under 35 U.S.C. § 112, ¶ 1: Enablement

Claims 6-9, 12-23, and 30 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly not being enabled by the specification. The Examiner alleges that the specification does not rasonably provide enablement for nucleic acids encoding all cellulases, plants transformed with those cellulases or non-transformed plants that express cellulases. Applicants respectfully disagree.

Enablement of a disclosure "is not precluded by the necessity for some experimentation such as routine screening." In re Wands, 858 F.2d 731, 736-7 (Fed. Cir. 1988) (citations omitted). The experimentation necessary must not be undue. Id. At 737. Undue experimentation is experimentation that would require a level of ingenuity beyond what is expected from one of ordinary skill in the field. Fields v. Conover, 170 USPQ 276, 279 (CCPA 1971). The factors that can be considered in determining whether an amount of experimentation is undue have been listed in Wands, 858 F.2d at 737. Among these factors are: the amount of effort involved, the guidance provided by the specification, the presence of working examples, the amount of pertinent literature and the level of skill in the art. The test for undue experimentation is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine. Id.

The relevant inquiry for determining whether the scope of the claims is commensurate with the specification is "whether the scope of enablement provided to one of ordinary skill in the art by the disclosure is such as to be commensurate with the scope of protection sought by the claims." In re Moore, 439 F.2d 1232, 1236 (CCPA 1971) (emphasis added). "A patent need not teach, and preferably omits, what is well known in the art." Hybridtech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986), cet. Denied, 480 U.S. 947 (1987).

While predictability of the art can be considered in determining whether an amount of experimentation is undue, mere unpredictability of the result of the experiment is not a consideration. Indeed, the Court of Customs and Patent Appeals has specifically cautioned that the unpredictability of the result of an experiment is not a

basis to conclude that the amount of experimentation is undue (see In re Angstadt, 190 USPQ 214 (CCPA 1976)).

The claims as amended are directed to transgenic plants comprising a microbial endoglucanase or endocellulase. The claims do not attempt to claim nucleic acids encoding all cellulases, and do not attempt to claim non-transformed plants that express cellulases.

The Office Action seems to be repeating the written description requirements in the rejection on enablement because the Office action contends that "the specification does not tach a representative number of nucleic acids encoding cellulases, and hence a representative number of plants comprising said nucleic acids" (pages 8-9).

It is not undue experimentation for one of ordinary skill in the art to transform a plant with a different endocellulase or endoglucanase once the description explains how to perform such task with an exemplary endoglucanase. Therefore, the specification as filed is enabled to those of ordinary skill in the art.

Rejection under 35 U.S.C. § 103: Bennett

Claims 6-8, 16-19, and 21-23 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Bennett *et al.*, U.S. Patent No. 5,168,064, issued December 1, 1992 ("the '064 Patent").

A finding of obviousness under § 103 requires a determination of the scope and content of the prior art, the level of ordinary skill in the art, the differences between the claimed subject matter and the prior art, and whether the differences are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. *Graham v. Deere*, 383 U.S. 1 (1966). The relevant inquiry is whether the prior art suggest the invention, and whether the prior art provides one of ordinary skill in the art with a reasonable expectation of success. *In re O'Farrell,* 853 F.2d 894, 903 (Fed. Cir. 1988). Both the suggestion and the reasonable expectation of success must be founded in the prior art and not in the Applicants' disclosure. *In re Vaeck,* 947 F.2d 488 (Fed. Cir. 1991). Also, the Examiner must also show why it

"would appear" that the references would have been combined. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

The cited reference does not make obvious the presently claimed invention.

Bennett does not teach, much less describe, the transformation of a plant with a microbial endoglucanase or endocellulase.

Applicants also question whether the tomato endoglucanase would actually be thermostable. The term thermostable usually means that an enzyme has higher activity at temperatures, for example, over 50°C. Applicants do not see any information in the Bennett patent as to whether the tomato endoglucanase was thermostable. Usually, thermostable enzymes are obtained from thermophilic organisms such as bacteria.

Since Bennett does not teach, much less suggest, all the elements of the presently claimed invention, it does not make obvious the invention.

Rejection of claims under 35 U.S.C. §103(a)

Claims 6-8, 12-19, 21-23 and 30 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bennett et al. (1992, USP 5,168,064) in view of Lao et al., (J. Bacteriol. 173:3397-3407). In particular, the Examiner alleges it would have been obvious to modify the plants transformed with a nucleic acid encoding endo-β-1,4-glucanase as taught by Bennett with nucleic acid encoding endo-β1,4-glucanse from *T. fusca* described in Lao.

The legal standard is set forth above. Again, the Examiner must also show why it "would appear" that the references would have been combined. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992).

Applicants respectfully disagree with this rejection as the Office Action fails to show any suggestion to combine the two references to create the presently claimed invention.

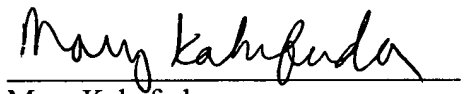
Applicants also respectfully disagree with the Examiner's characterization o the claims. The claims as amended are directed to transgenic plants comprising nucleic acid encoding a microbial endocellulase or endoglucanase. The claims are not solely directed to transgenic plants comprising a nucleic acid encoding an endoglucanase from *T. fusca*.

Therefore, the combined references fail to make obvious the presently claimed invention because there is no suggestion to combine the references to teach the invention as presently claimed. The above amendments and remarks overcome this rejection, and Applicants request its withdrawal.

CONCLUSION

Applicants point out that the above remarks and amendments over come the rejections. Reconsideration of the application and allowance of all pending claims is earnestly solicited. Should the Examiner wish to discuss any of the above in greater detail or deem that further amendments should be made to improve the form of the claims, the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,



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Date: November 10, 2004

CAZy - Carbohydrate-Active enZYmes

Family GH9

Family GH9 Go

CAZy Family	Glycoside Hydrolase Family 9
Known Activities	endoglucanase (EC 3.2.1.4); cellobiohydrolase (EC 3.2.1.91); β-glucosidase (EC 3.2.1.21)
Mechanism	Inverting
Catalytic Nucleophile/Base	Asp (experimental)
Catalytic Proton Donor	Glu (experimental)
3D Structure Status	Available (see PDB). Fold $(\alpha/\alpha)_6$
Note	formerly known as cellulase family E.
Relevant Links	HOMSTRAD; InterPro; PFAM; PROSITE
Statistics	CAZy(236); GenBank/GenPept (374); Swissprot (190); PDB (17); 3D(7); cryst(1)

Protein	Organism	EC#	GenBank / GenPept	SwissProt	PDB / 3D
scaffoldin CipV	*Acetivibrio cellulolyticus*	n.d.	AF155197 **AAF06064.1**	Q9RPL0	
cellulase CelA	*Alicyclobacillus acidocaldarius ATCC27009*	3.2.1.4	AJ308623 **CAC34051.1**	Q9AJS0	cryst
cellulase CelA	*Anaerocellum thermophilum*	3.2.1.91 3.2.1.4	Z86105 CAB06786.1	**P96311**	
At1g02800 (endo-1,4-glucanase)	*Arabidopsis thaliana*	3.2.1.4	AF034573 AAC16418.1 AC009525 AAF02887.1 NM_100159 NP_171779.1	**O64949** Q9SRX3	
At1g19940/F6F9_1	*Arabidopsis thaliana*	n.d.	AC022472 AAF79918.1 AC007797 **AAG12562.1** AY048245 AAK82507.1 AY113063 AAM47371.1 NM_101849 NP_173423.1	Q9FXI9 Q9LNS3	
At1g22880/F19G10.16	*Arabidopsis thaliana*	n.d.	AF000657 AAB72171.1 NM_102134 NP_173701.1	**O23134**	
At1g23210/T26J12.2 or F26F24.6	*Arabidopsis thaliana*	n.d.	AC002311 AAC00616.1 AC005292 AAF86995.1 NM_102170 NP_173735.1	**O49296**	
At1g48930/F27J15.28 OR F27K7.5	*Arabidopsis thaliana*	n.d.	AC016041 **AAF69707.1** AC084414 AAG29742.1 BT002935 AAO22749.1 BT005638 AAO64058.1 NM_103786 NP_175323.1	Q9FVQ2 Q9M995	
At1g64390/F15H21_9	*Arabidopsis thaliana*	n.d.	AC066689 AAG21508.1 AC066689 **AAG51703.1** AF372940 AAK50080.1 AY143945 AAN28884.1 BT000696 AAN31840.1 NM_105114 NP_176621.1	Q8H160 Q9C7W3	
At1g65610/F5I14.14	*Arabidopsis thaliana*	n.d.	AC001229 AAB60922.1 NM_105234 NP_176738.1	**O04478**	

At1g70710 (endo-1,4-glucanase)	*Arabidopsis thaliana*	3.2.1.4	AC011663	AAF09072.1	O23696
			AC011663	AAG52329.1	O23697
			AY048283	AAK82545.1	Q9CAC1
			AY074552	AAL67092.1	
			X98543	AAO30718.1	
			X98544	CAA67156.1	
			NM_105739	CAA67157.1	
				NP_177228.1	
At1g71380/F26A9.24	*Arabidopsis thaliana*	n.d.	U17888	AAA90944.1	Q38817
			AC016163	AAF23348.1	Q8LDE8
			AC016163	**AAG51817.1**	Q9C9H5
			AY086043	AAM63253.1	
			NM_105807	NP_177294.1	
At1g75680/F10A5.13	*Arabidopsis thaliana*	n.d.	AC006434	**AAF87112.1**	Q8LCP6
			AY039938	AAK64042.1	Q9LR07
			AY086475	AAM63477.1	
			AY150451	AAN12892.1	
			NM_106219	NP_177697.1	
At2g32990/T21L14.7	*Arabidopsis thaliana*	n.d.	AC003033	AAB91971.1	**O48766**
			AY062439	AAL32517.1	
			BT008885	AAP68324.1	
			NM_128859	NP_180858.1	
At2g44540/F4I1.36 or F16B22.3	*Arabidopsis thaliana*	n.d.	AC004521	AAC16100.1	**O64889**
			AC003672	AAC27456.1	
			AC004521	AAM14965.1	
			NM_130018	NP_181982.1	
At2g44550/F4I1.37 or F16B22.4	*Arabidopsis thaliana*	n.d.	AC004521	AAC16101.1	**O64890**
			AC003672	AAC27457.1	
			AC004521	AAM14964.1	
			NM_130019	NP_181983.1	
At2g44560/F16B22.5	*Arabidopsis thaliana*	n.d.	AC004521	AAC16102.1	**O64891**
			AC003672	AAC27458.1	Q8S8Q4
			AC004521	AAM14961.1	
			AK175889	BAD43652.1	
			NM_130020	NP_181984.1	
At2g44570/F16B22.6	*Arabidopsis thaliana*	n.d.	AC003672	AAC27459.1	**O80497**
			NM_130021	NP_181985.1	
At3g43860/T28A8_150	*Arabidopsis thaliana*	n.d.	AY072099	**AAL59921.1**	Q8VYG3
			AL162691	CAB83158.1	Q9LZG2
			NM_114254	NP_189972.1	
AT4g02290/T2H3_5	*Arabidopsis thaliana*	n.d.	AF075597	AAC28173.1	**O81416**
			AY079162	AAL85001.1	
			AY101518	AAM26639.1	
			AL161494	CAB80722.1	
			NM_116462	NP_192138.1	
At4g09740/F17A8.90	*Arabidopsis thaliana*	n.d.	AL049482	**CAB39641.1**	Q9SZ90
			AL161515	CAB78097.1	
			NM_117042	NP_192712.1	
At4g11050/F2P3.1	*Arabidopsis thaliana*	n.d.	AF080120	AAC35539.1	**O82513**
			AY133685	AAM91619.1	Q8L7I0
			AL049876	CAB43040.1	
			AL161518	CAB81206.1	
			NM_117175	NP_192843.2	
At4g23560/F9D16.30	*Arabidopsis thaliana*	n.d.	AL035394	**CAA23022.1**	Q9SUS0
			AL161559	CAB79311.1	
			NM_118487	NP_194087.1	
At4g24260/T22A6.90	*Arabidopsis thaliana*	n.d.	AL078637	**CAB45061.1**	Q9STW8
			AL161561	CAB79336.1	
			NM_118559	NP_194157.1	
At4g38990/F19H22.90	*Arabidopsis thaliana*	n.d.	AL035679	**CAB38819.1**	Q9SVJ4
			AL161594	CAB80562.1	
			NM_120059	NP_195610.1	
At4g39000/F19H22.100	*Arabidopsis thaliana*	n.d.	AK117850	BAC42491.1	Q8GY58
			AL035679	**CAB38820.1**	Q9SVJ3
			AL161594	CAB80563.1	
			NM_120060	NP_195611.1	
At4g39010/F19H22.110	*Arabidopsis thaliana*	n.d.	AY059825	**AAL24307.1**	Q93YQ7

				BT002204 AAN72215.1 AL035679 CAB38821.1 AL161594 CAB80564.1 NM_120061 NP_568050.1	Q9SVJ2	
At5g49720 (endo-1,4-glucanase KORRIGAN)		*Arabidopsis thaliana*	3.2.1.4	U37702 AAB60304.1 AF074092 AAC33467.1 AF074375 AAC35344.1 AF073875 **AAC83240.1** AY037218 AAK59818.1 AY086165 AAM63370.1 BT002221 AAN72232.1 AB025613 BAA98160.1 NM_124350 NP_199783.1	Q38890 Q8H0S4 Q8LD74 Q94C24	
BLi01880 or BL01232		*Bacillus licheniformis DSM 13 ATCC 14580*	n.d.	CP000002 AAU23415.1 AE017333 **AAU40775.1**		
cellulase (Cel9A)	*Cel9A*	*Bacillus licheniformis GXN151*	n.d.	AY445620 **AAR29083.1**		
endoglucanase A (EglA)		*Bacillus pumilus*	3.2.1.4	AY339624 **AAQ91573.1**		
endoglucanase		*Bacillus pumilus S-27*	3.2.1.4	AF206716 **AAF15367.1**	Q9R9H6	
endoglucanase CelB		*Bacillus sp. BP23*	3.2.1.4	AJ133614 CAB38941.1	**Q9Z4I1**	
endo-1,4-glucanase IV		*Bacillus sp. KSM-522*	3.2.1.4	AB004098 **BAA24918.1**	P28622 O50589	
cellulase Cel16		*Brassica napus*	3.2.1.4	AJ242807 **CAB51903.1**	Q9STD9	
endo-1,4-glucanase C		*Butyrivibrio fibrisolvens H17c*	3.2.1.4	X55732 CAA39264.1	**P23658**	
CelA		*Caldicellulosiruptor saccharolyticus*	3.2.1.4	L32742 AAA91086.1	**P22534**	
CelE		*Caldicellulosiruptor sp. Tok7B.1*	n.d.	AF078042 **AAK06394.1**		
ccx1 (fragment)		*Capsicum annuum*	3.2.1.4	X83709 CAA58684.1	**Q43749**	
ccx2 (fragment)		*Capsicum annuum*	3.2.1.4	X83710 CAA58685.1	**Q43750**	
ccx3 (fragment)		*Capsicum annuum*	3.2.1.4	X83711 CAA58686.1	**Q43751**	
endo-1,4-glucanase		*Capsicum annuum*	3.2.1.4	X97190 CAA65828.1 AJ010950 CAB59900.1	**Q96546** Q9SML6	
endo-1,4-glucanase		*Capsicum annuum*	3.2.1.4	X97189 CAA65827.1	**Q96547**	
endo-1,4-glucanase		*Capsicum annuum*	3.2.1.4	X97188 CAA65826.1	**Q96545**	
endo-1,4-glucanase C		*Capsicum annuum*	3.2.1.4	X87323 CAA60737.1	**Q42660**	
CC2227		*Caulobacter crescentus CB15*	n.d.	AE005894 **AAK24198.1** NC_002696 NP_421030.1	Q9A667	
endo-1,4-glucanase B	*Cel9A*	*Cellulomonas fimi*	3.2.1.4	M64644 AAA23086.1	**P26225**	
endo-1,4-glucanase C	*Cel9B*	*Cellulomonas fimi*	3.2.1.4	M29708 AAA23088.1 X57858 CAA40993.1	**P14090**	3D
endo-1,4-glucanase A		*Cellvibrio japonicus (formerly Pseudomonas cellulosa)*	3.2.1.4	X12570 CAA31082.1	**P10476**	
putative endoglucanase (EG)		*Cherax quadricarinatus*	n.d.	AF148497 **AAD38027.1** AY176645 AAO61672.2	Q86GS4 Q9Y0W2	
CV2882		*Chromobacterium violaceum ATCC 12472*	n.d.	AE016920 **AAQ60562.2**	Q7NU09	
acidic cellulase		*Citrus sinensis*	3.2.1.4	AF000135 AAB65155.1	**O22297**	
basic cellulase		*Citrus sinensis*	3.2.1.4	AF000136 AAB65156.1	**O22298**	
CAC0561		*Clostridium acetobutylicum ATCC 824*	n.d.	AE007571 AAK78540.1 NC_003030 NP_347200.1	**Q97LJ9**	
CAC0913		*Clostridium acetobutylicum ATCC 824*	n.d.	AE007607 AAK78889.1 NC_003030 NP_347549.1	**Q97KK5**	
CAC0917		*Clostridium acetobutylicum ATCC 824*	n.d.	AE007607 AAK78893.1 NC_003030 NP_347553.1	**Q97KK2**	
endoglucanase (CelG;CAC0916)		*Clostridium acetobutylicum ATCC 824*	3.2.1.4	AE007607 AAK78892.1 NC_003030 NP_347552.1	**Q97KK3**	
CelE	*Cel9E*	*Clostridium cellulolyticum*	n.d.	M87018 **AAA73869.2**	Q46002	
cellulase H (CelH)	*Cel9H*	*Clostridium cellulolyticum*	3.2.1.4	AF316823 AAG45157.1	**Q9EYQ5**	
cellulase J (CelJ)	*Cel9J*	*Clostridium cellulolyticum*	3.2.1.4	AF316823 AAG45158.1	**Q9EYQ4**	
cellulase M (CelM)	*Cel9M*	*Clostridium cellulolyticum*	3.2.1.4	AF316823 AAG45160.1	**Q9EYQ2**	1IA6 A 1IA7 A
endo-1,4-glucanase G (CelCCG)	*Cel9G*	*Clostridium cellulolyticum*	3.2.1.4	M87018 AAA73868.1	**P37700**	1G87 A 1GA2 A 1K72 B

							1KFG A
endo-1,4-glucanase H (fragment)		*Clostridium cellulovorans*	3.2.1.4	U34793	AAC38572.2	**O65987**	
endoglucanase K (EngK)		*Clostridium cellulovorans*	3.2.1.4	AF132735	**AAF06107.1**	Q9RGE8	
endoglucanase L (EngL)		*Clostridium cellulovorans*	3.2.1.4	AF132735	**AAF06109.1**	Q9RGE6	
endoglucanase M (EngM)		*Clostridium cellulovorans*	3.2.1.4	AF132735	**AAF06111.2**	Q9LAJ2	
endoglucanase Y (EngY)		*Clostridium cellulovorans*	3.2.1.4	AF105330	**AAG59608.1**	Q9AQF4	
EngO		*Clostridium cellulovorans*	n.d.	AY646113	**AAT66046.1**		
cellulase (CbhA) (fragment)		*Clostridium sp. JC3*	n.d.	AB093547	**BAC65236.1**	Q845W7	
endo-1,4-glucanase Z (avicelase I) (CelZ)		*Clostridium stercorarium*	3.2.1.4	X55299	CAA39010.1	**P23659**	
endoglucanase Q (CelQ)	*Cel9I*	*Clostridium thermocellum*	3.2.1.4	AB047845	**BAB33148.1**	Q9AJF8	
CelJ	*Cel9D-Cel44A*	*Clostridium thermocellum F1*	3.2.1.4	D83704	BAA12070.1	**P71140**	1WMX A
endoglucanase T (CelT)		*Clostridium thermocellum F1*	3.2.1.4	AB044407	**BAB79196.2**	Q8VV73	
β-1,4-glucanase (CelR)		*Clostridium thermocellum F7*	n.d.	AJ585346	**CAE51308.1**		
cellobiohydrolase A (CbhA)		*Clostridium thermocellum F7*	3.2.1.91	AJ005783 X80993	CAA06693.1 CAA56918.1	**Q59325**	
endo-1,4-glucanase (CelN)	*Cel9N*	*Clostridium thermocellum F7*	3.2.1.4	AJ275974	**CAB76935.1**	Q9L3J5	
cellobiohydrolase CelK		*Clostridium thermocellum JW 20 / F7*	3.2.1.4 3.2.1.91	AF039030 AJ005783	AAC06139.1 CAA06692.1	**O68438** O69308	
cellobiohydrolase (CbhA) (fragment)		*Clostridium thermocellum JW20*	3.2.1.91	AY494547	**AAR87745.1**		1RQ5 A 1UT9 A
endo-1,4-glucanase D (CelD)	*Cel9A*	*Clostridium thermocellum NCIB 10682*	3.2.1.4	X04584	CAA28255.1	**P04954**	1CLC _
endo-1,4-glucanase F	*Cel9B*	*Clostridium thermocellum NCIB 10682*	3.2.1.4	X60545	CAA43035.1	**P26224**	
endo-1,4-glucanase I (CelI or CMC)	*Cel9C*	*Clostridium thermocellum NCIB10682 / F7*	3.2.1.4	L04735 AJ275974	AAA20892.1 CAB76932.1	**Q02934** Q9L3J8	
cellulase		*Coptotermes acinaciformis*	n.d.	AF336120	**AAK12339.1**	Q9BMC7	
endo-β-1,4-glucanase (CfEG1A)		*Coptotermes formosanus*	3.2.1.4	AB058667	**BAB40693.1**		
endo-β-1,4-glucanase (CfEG1b)		*Coptotermes formosanus*	3.2.1.4	AB058668	**BAB40694.1**		
endo-β-1,4-glucanase (CfEG2)		*Coptotermes formosanus*	3.2.1.4	AB058669	**BAB40695.1**	Q9BLD3	
endo-β-1,4-glucanase (CfEG3)		*Coptotermes formosanus*	3.2.1.4	AB058670	**BAB40696.1**	Q9BLD2	
endo-β-1,4-glucanase (CfEG4)		*Coptotermes formosanus*	3.2.1.4	AB058671	**BAB40697.1**	Q9BLD1	
endo-1,4-glucanase		*Dictyostelium discoideum*	3.2.1.4	M33861	AAA52077.1	**P22699**	
cellulose-binding protein E1 (Cbpe1)		*Eubacterium cellulosolvens*	n.d.	AB072270	**BAB86305.1**		
endo-1,4-glucanase A		*Fibrobacter succinogenes*	3.2.1.4	M58520 M58520	AAA24894.1 AAA24895.1	**P23665** **P23664**	
endo-1,4-glucanase B		*Fibrobacter succinogenes*	3.2.1.4	L14436	AAA68129.1	**Q59444**	
endo-1,4-glucanase D (CelD)		*Fibrobacter succinogenes*	3.2.1.4	U05897	AAC44386.1	**P77864**	
endo-1,4-glucanase E		*Fibrobacter succinogenes*	3.2.1.4	U05897	AAC44385.1	**P71326**	
endo-1,4-glucanase C		*Fibrobacter succinogenes BL2*	3.2.1.4	L48039	AAC41523.1	**Q59442**	
endo-glucanase 1 (fragment)		*Ficus carica*	n.d.	AY487306	**AAR27059.1**		
endo-glucanase 2 (fragment)		*Ficus carica*	n.d.	AY487307	**AAR27060.1**		
endo-1,4-glucanase		*Fragaria x ananassa*	3.2.1.4	AF054615 AJ006349 AJ414708	AAC78298.2 CAB43938.1 CAC94006.1	**O65186**	
endo-1,4-glucanase Cel1		*Fragaria x ananassa*	3.2.1.4	AF051346 AJ223386	**AAC78293.1** CAA11301.1	Q9SB85 Q9ZTL0	
endo-1,4-glucanase Cel1		*Fragaria x ananassa*	3.2.1.4	AF074923 AJ006348	AAC95009.1 AAE73726.1 CAB43937.1	**O81403**	
ripening-related putative cellulase		*Fragaria x ananassa*	n.d.	AF041405 AJ414709	AAD12577.1 CAC94007.1	**Q9ZTS0**	
endo-1,4-β-glucanase (fragment)		*Fragaria x ananassa Fengxiang*	n.d.	AY619689	**AAT40310.1**		
PbgB protein (fragment)		*Fusobacterium mortiferum*	n.d.	U81184	AAB49340.1	**P94794**	
endo-1,4-glucanase (fragment)		*Glycine max*	3.2.1.4	U34755	AAA79877.1	**Q39826**	
putative cellulase (fragment)		*Glyptotermes sp. Wyong*	n.d.	AB024736	**BAA83767.1**	Q9U080	
abscission-specific cellulase (fragment)		*Gossypium hirsutum*	n.d.	AF538680	AAN04496.1	Q8LJP6	

endo-1,4-β-glucanase	*Gossypium hirsutum*	3.2.1.4	AY253447 **AAP83128.1** AY574906 AAS87601.1		
endo-1,4-glucanase (fragment)	*Gossypium hirsutum*	3.2.1.4	D88417 **BAA21111.1**	O23954	
cellulase (Hdcel-1)	*Haliotis discus*	n.d.	AB092978 **BAC67186.1**	Q86M37	
cellulase (Hdcel-1) (fragment)	*Haliotis discus*	n.d.	AB092979 **BAC67187.1**	Q86M36	
cellulase (CelhdD)	*Haliotis discus discus*	n.d.	AB162804 **BAD44734.1**		
cellulase	*Haliotis discus hannai*	n.d.	AB125892 **BAD01504.1**		
HsEG1 (fragment)	*Hodotermopsis sjoestedti*	n.d.	AB118662 **BAD11951.1**		
HsEG2 (fragment)	*Hodotermopsis sjoestedti*	n.d.	AB118794 **BAD12002.1**		
HsEG3 (fragment)	*Hodotermopsis sjoestedti*	n.d.	AB118795 **BAD12003.1**		
HsEG4 (fragment)	*Hodotermopsis sjoestedti*	n.d.	AB118796 **BAD12004.1**		
unnamed protein product	*Homo sapiens*	n.d.	AK095918 **BAC04648.1**	Q8N909	
endoglucanase Cel1	*Hordeum vulgare Himalaya*	3.2.1.4	AB040769 **BAA94257.1**	Q9MAY8	
endo-1,4-β-glucanase Cel1	*Lilium longiflorum*	3.2.1.4	AY205300 **AAP38171.1**	Q7XB15	
Lin0032	*Listeria innocua Clip11262*	n.d.	AL596163 **CAC95265.1** NC_003212 NP_469379.1		
Lmo0033	*Listeria monocytogenes EGD-e*	n.d.	AL591973 **CAC98248.1** NC_003210 NP_463566.1		
LMOf2365_0042	*Listeria monocytogenes str. 4b F2365*	n.d.	AE017322 **AAT02830.1**		
cellulase 6 (fragment)	*Lycopersicon esculentum*	n.d.	- **AAB46829.1**		
endo-1,4-glucanase	*Lycopersicon esculentum*	3.2.1.4	Y11268 CAA72133.1	**O04972**	
endo-1,4-glucanase	*Lycopersicon esculentum*	3.2.1.4	U20590 AAA80495.1	**Q42875**	
endo-1,4-glucanase (Cel3)	*Lycopersicon esculentum*	3.2.1.4	- AAB46826.1 U78526 AAC49704.1	**O04890**	
endo-1,4-glucanase 1	*Lycopersicon esculentum*	3.2.1.4	U13054 AAA69908.1 - AAB46824.1 - AAQ68347.1	**Q42871**	
endo-1,4-glucanase 2	*Lycopersicon esculentum*	3.2.1.4	U13055 AAA69909.1 AJ505749 CAD44274.1	**Q42872**	
endo-1,4-glucanase 5	*Lycopersicon esculentum*	3.2.1.4	AAB46828 AAB46828.1 AF077339 AAC62241.1 AF077340 AAC64045.1	**O82473** Q9SBD3	
endo-1,4-glucanase 8	*Lycopersicon esculentum*	3.2.1.4	AF098292 **AAD08699.1**	Q9ZSP9	
endo-1,4-β-glucanase MdEG1	*Malus x domestica*	n.d.	AY350734 **AAQ55294.1**		
Cel (fragment)	*Mangifera indica*	n.d.	AJ505607 **CAD44261.1**		
Cel (fragment)	*Mangifera indica*	n.d.	AJ505608 **CAD44262.1** AJ505609 CAD44263.1		
β-1,4-endoglucanase (Cel1)	*Mastotermes darwiniensis*	3.2.1.4	AJ511339 **CAD54726.1**	Q8IFU6	
β-1,4-endoglucanase (Cel2)	*Mastotermes darwiniensis*	3.2.1.4	AJ511340 **CAD54727.1**	Q8IFU5	
β-1,4-endoglucanase (Cel3)	*Mastotermes darwiniensis*	3.2.1.4	AJ511341 **CAD54728.1**	Q8IFU4	
β-1,4-endoglucanase (Cel4)	*Mastotermes darwiniensis*	3.2.1.4	AJ511342 **CAD54729.1**	Q8IFU3	
β-1,4-endoglucanase (Cel5)	*Mastotermes darwiniensis*	3.2.1.4	AJ511343 **CAD54730.1**	Q8IFU2	
Cel1	*Medicago truncatula*	n.d.	AY308955 **AAQ63883.1**		
endocellulase (EgltA)	*Myxobacter sp. AL-1*	3.2.1.4	AF180561 **AAF19168.1**	Q9RAI8	
endo-1,4-glucanase (fragment)	*Nasutitermes takasagoensis*	n.d.	AB019588 **BAA77347.1**	Q9XXW7	
endo-1,4-glucanase (NtEG)	*Nasutitermes takasagoensis*	3.2.1.4	AB013272 BAA33708.1 AB019146 BAA76619.1	**O77044**	1KS8 A 1KSC A 1KSD A
NtEG2 (fragment)	*Nasutitermes takasagoensis*	n.d.	AB118803 **BAD12011.1**		
endo-1,4-glucanase (NwEG)	*Nasutitermes walkeri*	3.2.1.4	AB013273 BAA33709.1	**O77045**	
NkEG1 (fragment)	*Neotermes koshunensis*	n.d.	AB118797 **BAD12005.1**		
NkEG2 (fragment)	*Neotermes koshunensis*	n.d.	AB118798 **BAD12006.1**		
NkEG3 (fragment)	*Neotermes koshunensis*	n.d.	AB118799 **BAD12007.1**		
ORF	*Nicotiana alata*	n.d.	AF128404 **AAD28258.1**	Q9XF22	
endo-1,4-glucanase (Cel2)	*Nicotiana tabacum*	3.2.1.4	AF362948 **AAL30453.1**	Q93WZ0	
endo-1,4-glucanase (Cel5) (fragment)	*Nicotiana tabacum*	n.d.	AF362951 **AAL30456.1**	Q93WY7	
endo-1,4-glucanase (Cel7)	*Nicotiana tabacum*	3.2.1.4	AF362947 **AAL30452.1**	Q93WZ1	

endo-1,4-glucanase (Cel8)		*Nicotiana tabacum*	3.2.1.4	AF362949 **AAL30454.1**	Q93WY9
endo-1,4-glucanase precursor (Cel4) (fragment)		*Nicotiana tabacum*	n.d.	AF362950 **AAL30455.1**	Q93WY8
OfEG1 (fragment)		*Odontotermes formosanus*	n.d.	AB118800 **BAD12008.1**	
OfEG2 (fragment)		*Odontotermes formosanus*	n.d.	AB118801 **BAD12009.1**	
OfEG3 (fragment)		*Odontotermes formosanus*	n.d.	AB118802 **BAD12010.1**	
006-35		*Oikopleura dioica*	n.d.	AY449462 **AAS21473.1**	
B1011A07.20		*Oryza sativa (japonica cultivar-group)*	n.d.	AP003722 **BAB92772.1**	Q8LQ92
B1339H09.3 or OSJNOa018M17.6		*Oryza sativa (japonica cultivar-group)*	n.d.	AP006453 **BAD26493.1** AP007149 BAD26550.1	
OJ1112_E07.17-1		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005092 **BAD33331.1**	
OJ1136_C11.27 (fragment)		*Oryza sativa (japonica cultivar-group)*	n.d.	AP004027 **BAD45673.1**	
OJ1293_A01.6		*Oryza sativa (japonica cultivar-group)*	n.d.	AP004846 **BAD19513.1**	
OJ1531_B07.26		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005682 **BAD33772.1**	
OSJNBa0018M05.14 or OSJNBa0018M05.16		*Oryza sativa (japonica cultivar-group)*	n.d.	AL606457 **CAE03239.1** AL606457 CAE03241.2	
OSJNBa0050G13.22		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005412 **BAD38054.1**	
OSJNBa0067K08.12 or OSJNBa0067K08.14		*Oryza sativa (japonica cultivar-group)*	n.d.	AL606627 **CAD41248.1** AL606627 CAD41250.2	
OSJNBa0074P11.11		*Oryza sativa (japonica cultivar-group)*	n.d.	AC135914 **AAT44235.1**	
OSJNBb0016H12.13		*Oryza sativa (japonica cultivar-group)*	n.d.	AC118133 **AAP03405.1** AY387483 AAR07086.1	Q84R49
P0041A24.5		*Oryza sativa (japonica cultivar-group)*	n.d.	BX548155 **CAE01493.1**	
P0427G12.14		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005657 **BAD10555.1**	
P0434E03.25		*Oryza sativa (japonica cultivar-group)*	n.d.	AP004689 **BAD05437.1**	
P0456B03.7		*Oryza sativa (japonica cultivar-group)*	n.d.	AP004463 **BAC55745.1**	Q84Q51
P0481E08.13		*Oryza sativa (japonica cultivar-group)*	n.d.	AP003614 **BAD53575.1**	
P0489G09.19		*Oryza sativa (japonica cultivar-group)*	n.d.	AP002094 BAA96207.1 AP002745 **BAC00551.1** NM_188489 NP_913378.1	
P0489G09.22		*Oryza sativa (japonica cultivar-group)*	n.d.	AP002094 BAA96209.1 AP002745 **BAC00553.1**	
P0575F10.17		*Oryza sativa (japonica cultivar-group)*	n.d.	AP004885 **BAD07956.1**	
P0624H09.19		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005619 **BAD46308.1**	
P0643A10.32		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005319 **BAD16147.1**	
P0684F11.11		*Oryza sativa (japonica cultivar-group)*	n.d.	AP005112 **BAD16040.1**	
endoglucanase 1 (EG1)		*Panesthia cribrata*	3.2.1.4	AF220596 **AAF80584.1**	Q9NCE3
endoglucanase 2 (EG2)		*Panesthia cribrata*	3.2.1.4	AF220597 **AAF80585.1**	Q9NCE2
endo-1,4-glucanase 1		*Persea americana*	3.2.1.4	M17634 AAA32912.1 X59944 AAO30720.1 CAA42569.1	**P05522**
endo-1,4-glucanase 2 (fragment)		*Persea americana*	3.2.1.4	X55790 CAA39314.1	**P23666**
Cel9A	*Cel9A*	*Phanerochaete chrysosporium BKM-F-1767*	n.d.	AY094488 **AAM22492.1**	Q8NJJ0
endo-1,4-glucanase		*Phaseolus vulgaris*	3.2.1.4	M57400 AAA02563.1	**P22503**
endo-1,4-glucanase		*Phaseolus vulgaris*	3.2.1.4	U34754 AAC78504.1	**Q43105**

PBPRA0520		*Photobacterium profundum SS9*	n.d.	CR378664 **CAG18943.1**		
endo-1,4-glucanase 1		*Pinus radiata*	3.2.1.4	U76725 AAC12684.1	**O64401**	
endo-1,4-glucanase 2		*Pinus radiata*	3.2.1.4	U76756 AAC12685.1	**O64402**	
cellulase Cel9A	*Cel9A*	*Piromyces sp. E2*	n.d.	AF459452 AAM81966.1 AF459453 **AAM81967.1**	Q8NJX5 Q8NJX6	
endoglucanase Cel9 (fragment)		*Piromyces sp. E2*	n.d.	AF500793 **AAP30753.1**	Q870A8	
endo-1,4-β-glucanase (EGL2)		*Pisum sativum*	3.2.1.4	AB032830 **BAA85150.1**	Q9SSU7	
endo-1,4-glucanase		*Pisum sativum*	3.2.1.4	L41046 AAA96135.1	**Q41012**	
Kor-1 (fragment)		*Pisum sativum*	n.d.	AJ621355 **CAF18445.1**		
endo-1,4-glucanase Cel1		*Populus alba*	3.2.1.4	D32166 BAA06877.1 AB049199 BAB39482.1	**Q40763** Q9AVI5	
endo-1,4-glucanase Cel2		*Populus alba*	3.2.1.4	AB025796 **BAA77239.1** AB049200 BAB39483.1	Q9XIY8	
Cel9A	*Cel9A*	*Populus tremula x Populus tremuloides*	3.2.1.-	AY660967 **AAT75041.1**		
Cel9B	*Cel9B*	*Populus tremula x Populus tremuloides*	3.2.1.-	AY660968 **AAT75042.1**		
endo-1,4-β-glucanase (Kor1)		*Populus tremuloides*	n.d.	AY535003 **AAS45400.1**		
endo-1,4-glucanase		*Prunus persica*	3.2.1.4	X96853 CAA65597.1 X96856 CAA65600.1	**P94114**	
endo-1,4-glucanase (fragment)		*Prunus persica*	3.2.1.4	Z23119 CAA80665.1	**P38534**	
endo-β-1,4-glucanase (Pcel20) (fragment)		*Prunus persica*	3.2.1.4	X96854 **CAA65598**	O24280	
endoglucanase Cel9A	*Cel9A*	*Pseudomonas sp. SK38*	3.2.1.4	AF296443 **AAG49558.1**	Q9APG3	
endo-1,4-glucanase		*Pseudomonas sp. YD-15*	3.2.1.4	AF033262 **AAD01959.1**	Q9Z3X7	
endo-1,4-β-D-glucanase (PC-EG1)		*Pyrus communis*	3.2.1.4	AB084463 **BAC22690.1**	Q8GTP6	
endo-1,4-β-D-glucanase (PC-EG2)		*Pyrus communis*	3.2.1.4	AB084464 **BAC22691.1**	Q8GTP5	
cellulase		*Reticulitermes flavipes*	n.d.	AY572862 **AAU20853.1**		
endo-1,4-glucanase (RsEG)		*Reticulitermes speratus*	3.2.1.4	AB012394 BAA28815.1 AB008778 BAA31326.1 AB023398 BAA74961.1	**O76130** Q9U8X4	
endo-1,4-glucanase 2 (RsEG2)		*Reticulitermes speratus*	3.2.1.4	AB019095 **BAA34050.1** AB019353 BAA34120.1 AB023399 BAA74962.1	O96106 Q9U901	
Cellulase Cel9B	*Cel9B*	*Ruminococcus albus 8*	n.d.	AY422810 **AAR01216.1**		
processive endocellulase (Cel9C)	*Cel9C*	*Ruminococcus albus 8*	n.d.	AY632899 **AAT48118.1**		
cellulase VI (Cel9A)	*Cel9A*	*Ruminococcus albus F-40*	n.d.	AB028321 **BAB64431.1**	Q93IE6	
endo-1,4-glucanase D (fragment)		*Ruminococcus flavefaciens FD-1*	3.2.1.4	L05368 AAA17731.1	**Q52746**	
endo-1,4-glucanase		*Sambucus nigra*	3.2.1.4	X74290 CAA52343.1	**Q43149**	
SmEG1 (fragment)		*Sinocapritermes mushae*	n.d.	AB118804 **BAD12012.1**		
SmEG2 (fragment)		*Sinocapritermes mushae*	n.d.	AB118805 **BAD12013.1**		
SmEG3 (fragment)		*Sinocapritermes mushae*	n.d.	AB118806 **BAD12014.1**		
endo 1,4-glucanase (SLEG.1) (fragment)		*Stellaria longipes 1D (alpine)*	3.2.1.4	U59308 **AAB02932.1**	Q43146	
Cel1 (SCO0765 or SCF81.24c)		*Streptomyces coelicolor A3(2)*	n.d.	AL133171 **CAB61539.1** NC_003888 NP_625068.1	Q9RJC8	
SCO7583 or SC5F1.37		*Streptomyces coelicolor A3(2)*	n.d.	AL450165 **CAC16463.1** NC_003888 NP_631626.1	Q9F392	
endo-1,4-glucanase I		*Streptomyces reticuli*	3.2.1.4	X65616 CAA46570.1	**Q05156**	
slr0897		*Synechocystis sp. PCC 6803*	n.d.	D64003 BAA10447.1 NC_000911 NP_442377.1	**Q55365**	
glucanase (fragment)		*Theobroma cacao*	n.d.	AY487173 **AAS49036.1**		
endo-1,4-glucanase E1	*Cel9B*	*Thermobifida fusca*	3.2.1.4	L20094 AAC06387.1	**Q08166**	
endo/exo-1,4-glucanase E4	*Cel9A*	*Thermobifida fusca*	3.2.1.4	M73322 AAA27397.1 L20093 AAB42155.1	**P26221** **Q08167**	1JS4 A 1TF4 B 3TF4 A 4TF4 B
endo-1,4-β-glucanase		*Triticum aestivum*	n.d.	AY091512 **AAM13693.1**	Q8RWR6	
ORF (fragment)		*Triticum aestivum*	n.d.	AJ577371 **CAE53892.1**		
cellulase		*uncultured bacterium*	n.d.	AJ537595 **CAD61242.1**		
β-glucosidase (BglA;VC0615)		*Vibrio cholerae N16961*	3.2.1.21	AE004147 **AAF93781.1**	Q9KUA8	

			NC_002505 NP_230264.1	
VP2484	*Vibrio parahaemolyticus RIMD 2210633*	n.d.	AP005081 **BAC60747.1** NC_004603 NP_798863.1	
VV11668	*Vibrio vulnificus CMCP6*	n.d.	AE016802 **AAO10085.1** NC_004459 NP_760558.1	
VV2739	*Vibrio vulnificus YJ016*	n.d.	AP005341 **BAC95503.1** NC_005139 NP_935532.1	Q7MHX8
CEL1 (fragment)	*Vitis vinifera*	n.d.	AY043236 **AAK81879.1**	Q94B12
CEL2 (fragment)	*Vitis vinifera*	n.d.	AY043235 **AAK81878.1**	Q94B13
Egl2	*Xanthomonas axonopodis pv. citri str. 306*	n.d.	AE011891 **AAM37373.1** NC_003919 NP_642837.1	
endo-1,4-β-D-glucanase (Egl2)	*Xanthomonas campestris pv. campestris*	3.2.1.4	AJ245855 **CAB63115.1**	Q9RBJ4
Egl2 (cellulase)	*Xanthomonas campestris pv. campestris str. ATCC 33913*	n.d.	AE012348 **AAM41665.1** NC_003902 NP_637741.1	

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Please send your comments to **Bernard Henrissat, Pedro Coutinho** or **Mark Stam**